Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 15 of the Commission's Rules To Establish Regulations for Tank Level Probing Radars in the Frequency Band 77-81 GHz	)	ET Docket No. 10-23
	)	
and	)	
	)	
Amendment of Part 15 of the Commission's Rules To Establish Regulations for Level Probing Radars and Tank Level Probing Radars in the Frequency Bands 5.925-7.250 GHz, 24.05-29.00 GHz and 75-85 GHz	)	

REPLY COMMENTS OF KROHNE AMERICA, INC.

Krohne America, Inc. ("Krohne"), by its attorneys, submits these Reply Comments in connection with the Further Notice of Proposed Rule Making in the above-captioned proceeding.[1] Krohne, a leading worldwide manufacturer of process instrumentation and measurement systems, filed Comments in this proceeding and is invested in its outcome.[2]

In its Comments, Krohne described the critical functions served by level probing radars ("LPR") and tank level probing radars ("TLPR"),[3] including the prevention of accidents and hazardous spills that threaten public safety. Like Krohne, most commenters welcomed the

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[1] *Amendment of Part 15 of the Commission's Rules to Establish Regulations for Tank Level Probing Radars in the Frequency Band 77-81 GHz and Amendment of Part 15 of the Commission's Rules to Establish Regulations for Level Probing Radars and Tank Level Probing Radars in the Frequency Bands 5.925-7.250 GHz, 24.05-29.00 GHz and 75-85 GHz, Further Notice of Proposed Rule Making*, ET Docket No. 10-23, FCC 12-34 (rel. March 27, 2012) ("*FNPRM*").

[2] *See* Krohne America, Inc., Comments in ET Docket No. 10-23, filed May 30, 2012.

[3] The term "LPR" is used herein to refer to level probing radars not installed inside enclosures, whereas the term "TLPR" is used to refer only to level probing radars installed in such enclosures (*e.g.*, metal tanks).

Commission's plan to adopt a new regulatory regime for these devices, in lieu of the current mishmash of rules and waiver requests.

Krohne asked the Commission to truly harmonize the TLPR rules with international standards by acknowledging the existence of the tank structure for EMC compliance purposes. Several commenters agreed with Krohne's recommendation that the rules must address the unique properties of in-tank installations. For example, several parties explained that in-tank antenna openings are often simply too small to accommodate antennas that would meet the Commission's proposed beamwidth limits.[4] Further, such limits are not necessary given the attenuation provided by the tank.

Krohne agrees with comments urging the Commission to retain current Section 15.209 as an option for TLPRs.[5] Significantly, no commenting party pointed to any instance of interference caused by the operation of a TLPR under the current rules and waivers. Accordingly, the concerns expressed in the comments of the Engineers for the Integrity of Broadcast Auxiliary Services Spectrum ("EIBASS") are unfounded.[6] EIBASS suggests that the limits proposed for the new rules will potentially interfere with TV Broadcast Auxiliary Service operations at 6.5 GHz and 7 GHz. Yet, the Commission itself stated, "The proposed emission limits…would maintain the existing level of interference protection to incumbent radio

[4] *See, e.g.,* Measurement, Control & Automation Association ("MCAA"), Comments in ET Docket No. 10-23, filed May 30, 2012, at 2-3; Siemens Milltronics Process Instruments, Comments in ET Docket No. 10-23, filed May 30, 2012, at 3.

[5] *See* MCAA Comments at 3; Emerson Process Management, Comments in ET Docket No. 10-23, filed May 30, 2012, at 1. Krohne also proposed that the designated LPR/TLPR band in the new rules be extended from 5.925-7.250 GHz to 5.460 to 7.250 GHz. *See* Krohne Comments at 3.

[6] Engineers for the Integrity of Broadcast Auxiliary Services Spectrum, Comments in ET Docket No. 10-23, filed May 30, 2012, at 1.

services."[7] And, as noted above, EIBASS fails to indicate any report of interference caused by those existing levels. In addition, Krohne proposed that the existing Section 15.209 limits be kept for the 6 GHz band in the new rules for TLPRs only, where any concern over potential (but as yet still completely theoretical) interference will be mitigated by the enclosure of the tank. EIBASS' suggested "safeguards" are therefore not only unnecessary, but cumbersome and unrealistic.

EIBASS claims that the Commission has more tenuous control over unlicensed, Part 15 devices[8] and proposes "safeguards" based apparently on the belief that the Commission's rules cannot otherwise be enforced. Krohne strongly urges the Commission to reject these alleged safeguards, which will only cause operational burdens on operators and installers. For instance, EIBASS proposes that LPRs (including TLPRs) have built-in circuits to ensure the device is stationary and aimed downward. The fact is, however, that a TLPR device will not operate properly if misaligned and not oriented exactly downward so this concern is self-correcting. Furthermore, there is no need for the Commission to micro-manage the installation of TLPRs, as EIBASS suggests. These devices are used primarily in industrial settings by sophisticated industrial and governmental users who are capable of determining if the device is operating incorrectly and selecting qualified installers. Similarly, EIBASS' proposed record-keeping requirement for installers would create operational burdens for no reason. If improper installation occurred, or interference did arise (again, only theoretically as no instance has been shown), the device's owner would consult the manufacturer and/or installer in the normal course

[7] *FNPRM* at ¶ 24. Indeed, the Commission proposed a more stringent limit for the 5.925-7.250 GHz band. *Id*. at ¶ 25 fn. 59. Krohne urged the Commission not to do so, in order to harmonize with international standards specific to TLPR. *See* Krohne Comments at 5.
[8] EIBASS Comments at 2.

to resolve the issue.[9]

Similarly, like MCAA and its members, Krohne strongly opposes the suggestion from the National Radio Astronomy Observatory ("NRAO") and National Academy of Sciences ("NAS") that the entire industry be permanently required to maintain a public database of installed locations. Again, this is an attempt to micro-manage an industry, causing its members operational burdens, without justification. First, Krohne's customers, particularly governmental users, protect their sensitive operational data and trade secrets, which often includes the location of tanks and storage facilities. Second, like many manufacturers, Krohne's devices are often sold and installed by one or more third parties. In acknowledging the "diversity of vendors, installers and operators" involved in the distribution chain, NRAO suggests on reply that an email or letter could be sent to the National Science Foundation, Inc. and only when an installation occurs within 40 km of a radio astronomy site.[10] Although Krohne appreciates NRAO's recognition that a broader database would be difficult to maintain, NRAO's suggestion still creates the same confidentiality and operational problems discussed above.[11] The burden associated with overcoming these two obstacles in order to maintain a public database is not justified. Krohne does not object to the exclusion zones for radio astronomy sites as proposed by

[9] EIBASS assumes that an interfering device will be difficult to locate because it further assumes that manufacturers and users will violate the Commission's rules against hand-held, mobile uses by consumers. *See* EIBASS Comments at 2 fn. 3 (hand-held operation "would be an unenforceable restriction"). The Commission does not and should not craft rules on the assumption that manufacturers and users will violate them.

[10] NRAO, Reply Comments in ET Docket No. 10-23, filed June 20, 2012, at 2.

[11] Krohne would not object to the requirement that manufacturers include a statement in the user manual directing the user to notify the Commission of LPR installations within 40 km of specified radio astronomy sites (provided such obligation runs directly to the user). The Commission could establish a confidential e-mail address to receive such notifications, which the Commission could consult in the unlikely event an interference report is received.

MCAA.[12] Thus, the chances of NRAO and NAS needing to consult a database is extremely small. The Commission certainly does not require all Part 15 device manufacturers to maintain public database listings and there is no compelling reason (i.e., the suggestion that severe levels of interference will be caused) to treat LPRs/TLPRs any differently.

Finally, Krohne refutes the proposals regarding side lobe emissions in the late-filed comments by Delphi Automotive.[13] Delphi suggests the Commission should adopt side lobe power emissions specifications and verification procedures, but provides no technical analyses as to why such rules are required or even what the specifications should be. Delphi appears to confuse the consideration of antenna directivity and losses, which are independent factors in calculating antenna gain.[14] If the antenna has losses, side lobe levels remain the same compared to the main lobe. Both the Electronics Communications Committee and the Commission found that if a LPR complies with the main-beam emission limits, any reflected emissions, including side lobe emissions, will also comply.[15] Delphi does not dispute this conclusion or otherwise justify the adoption of additional side lobe emission levels or testing.

The comments in this proceeding support the adoption of rules that will continue to foster the development of important LPR and TLPR technology. Krohne continues to urge the Commission to adopt rules that align with international standards for TLPRs, including

[12] MCAA Comments at 4-5.
[13] Delphi Automotive, Comments in ET Docket No. 10-23, filed June 11, 2012.
[14] The Commission has recognized the need for international harmonization of LPR/TLPR rules. Krohne has also stressed that these rules must be harmonized. To that end, if the Commission adopts limits on the gain of the antenna in the side lobe region and off-axis angle where the gain is to be defined, those limits should match the parameters used in the ETSI/ECC modeling. *See FNPRM* at ¶ 30.
[15] ECC Report 139; *FNPRM* at ¶ 25. Although Delphi suggests that automatic power control ("APC") could be used in part to demonstrate compliance with a side lobe emission level, it fails to provide the technical analyses specifically required by the Commission if a party proposes an APC requirement. *See FNPRM* at ¶ 31.

extending the 6 GHz frequency band in the new rules, maintaining Section 15.209 limits, allowing testing *in situ* using representative tanks, and modifying overly-restrictive beamwidth limits. Krohne also urges the Commission to reject suggestions that would impose operational burdens, such as professional installer lists and public location databases, but have no compelling benefit.

Respectfully submitted,

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